

Nurse Researcher

A worked example, the application of the Framework Approach to analyse qualitative data: strengths and challenges

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Abstract:	<p>Abstract</p> <p>Background Data management and analysis are crucial stages in the research process, particularly in qualitative research where large volumes of data are collected. There are a range of approaches that can be used for managing and analysing qualitative data. The Framework Approach is one example which is widely used in nursing research.</p> <p>Aim To consider the strengths and challenges of the Framework Approach and its application to practice to aid the novice researcher in their selection of approach to thematic analysis.</p> <p>Discussion This article provides an account of one novice researchers' experience of using Framework for thematic analysis. The article begins with an explanation of Framework and why it was selected, followed by its application to practice using a worked example, and account of the strengths and challenges of using this approach.</p> <p>Conclusion Framework is one approach to qualitative data analysis that offers the researcher a systematic structure to manage, analyse and identify themes enabling the development and maintenance of a transparent audit trail. It is particularly useful with large volumes of text based data and is suitable for use with different qualitative approaches.</p> <p>Implications for research and practice The Framework approach facilitates immersion in qualitative data and reflexivity which can increase the researchers' understanding of participant views and experiences. To ensure its successful application, the novice researcher should seek supervisors experienced in applying Framework to qualitative data.</p>
Keywords:	Qualitative Research, Data management, Data Analysis, The Framework Approach
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Title

A worked example, the application of the Framework Approach to analyse qualitative data: strengths and challenges.

Abstract

Background

Data management and analysis are crucial stages in the research process, particularly in qualitative research where large volumes of data are collected. There are a range of approaches that can be used for managing and analysing qualitative data. The Framework Approach is one example which is widely used in nursing research.

Aim

To consider the strengths and challenges of the Framework Approach and its application to practice to aid the novice researcher in their selection of approach to thematic analysis.

Discussion

This article provides an account of one novice researchers' experience of using Framework for thematic analysis. The article begins with an explanation of Framework and why it was selected, followed by its application to practice using a worked example, and account of the strengths and challenges of using this approach.

Conclusion

Framework is one approach to qualitative data analysis that offers the researcher a systematic structure to manage, analyse and identify themes enabling the development and maintenance of a transparent audit trail. It is particularly useful with large volumes of text based data and is suitable for use with different qualitative approaches.

Implications for research and practice

The Framework approach facilitates immersion in qualitative data and reflexivity which can increase the researchers' understanding of participant views and experiences. To ensure its successful application, the novice researcher should seek supervisors experienced in applying Framework to qualitative data.

Key Words

Qualitative Research, Data management, Data Analysis, The Framework Approach.

Introduction

Data management and analysis are crucial stages in the research process particularly in qualitative research where data analysis often commences during data collection (Moule, Aveyard and Goodman, 2016). Due to the volume of text based data collected, it is essential for qualitative researchers to organise and manage data to ensure it can be easily retrieved for analysis. Moreover, to assure others of the rigour and trustworthiness of the process.

In view of this, it is important when designing a research study to consider carefully what analytical approach will be utilised (Parahoo, 2014). However, this is no easy

task and it can be challenging for the novice researcher to select an appropriate approach to analyse qualitative data. Deciding which approach is most appropriate is dependent not only upon an understanding of the research approach, but also an understanding of the philosophical stance underpinning it (Morse et al, 2002; Snape and Spencer, 2010). What is more, the aims of the research and the research questions should also guide the decision (Spencer et al, 2014; Parkinson et al, 2016).

There are a range of approaches that can be undertaken to manage and analyse qualitative data. This article will provide an account of the first author's experience of using Framework (Spencer et al, 2003), for managing and thematically analysing data from a qualitative study exploring school nurses' perceptions of their role and training needs for child protection practice. The article will begin with an explanation of Framework and why it was selected, followed by its application to practice through a worked example, and an account of the strengths and challenges of using this approach.

What is 'Framework?'

Framework is an approach to qualitative data analysis that offers the researcher a systematic structure to manage, analyse and identify themes, and is particularly useful with large volumes of text based data. It was developed in the UK in the 1980s, at the National Centre for Social Research by qualitative researchers, Jane Ritchie and Liz Spencer for use in policy development research, which required a highly structured systematic approach to the analysis of qualitative data (Ritchie and Lewis, 2003). Such a structured approach has been found to provide useful guidance to novice researchers (Smith and Firth, 2011). Framework is matrix-based and comprises of five interconnected stages that provide clear guidance on data analysis from initial

collection and management through to the development of explanatory accounts (See figure one) (Smith and Firth 2011; Spencer et al, 2014).

INSERT FIGURE ONE

Central to the approach is the development of a 'thematic framework' specific to the research study which enables the researcher to label, classify and organise data in relation to key themes, concepts and categories (Ritchie, Spencer and O'Connor, 2010). The thematic framework is based on an analytical hierarchy which Spencer, Ritchie and O'Connor (2010) chose to depict using the metaphor of a ladder where each rung represents a distinct stage of the analytical process (see Figure One). The ladder represents the fact that qualitative analysis is a continuous, flexible and iterative process whereby the researcher frequently moves up and down between the different stages of data analysis, and backwards and forwards across the data to identify emerging themes.

Relevance of Framework Analysis to Nursing Research

Framework has been widely used in nursing research (McMillen, 2008; Smith and Firth, 2011; Swallow et al, 2011; Ward et al, 2013). It is also commonly used in evaluation projects which have adopted a qualitative approach, and can be used with a wide variety of narrative data collection methods such as interviews, focus groups, observation and documentary analysis (Spencer et al, 2003)

Why was this approach selected?

Framework is not aligned to any particular epistemological, philosophical or theoretical approach, and can be used with a range of qualitative approaches (Gale et al, 2013).

This was an important consideration when designing the study in the worked example, as it is acknowledged that the philosophical assumptions underpinning the research approach can influence the data analysis process (Ritchie, Spencer and O'Connor, 2010; Holloway and Wheeler, 2010). The first author was seeking an approach to data analysis that was congruent with an interpretive stance and would support data management, identification of themes and interpretation of participant accounts. Framework provides a highly structured approach to the analysis of qualitative data, and although this does hint at considerable influence from the quantitative paradigm (Gale et al, 2013), the processes are flexible and iterative facilitating interpretation of data. In addition, the systematic processes along with the ability for the analysis to be completed without computer assisted software provides useful structure and guidance for novice researchers (Swallow, Newton and Van Lottum, 2003; Brunt, 2011).

[Applying Framework: A worked example](#)

In this section an outline of the study will be provided followed by discussion of how the first author applied the framework approach to undertake the data analysis. A qualitative phenomenological approach was employed to explore school nurses' perceptions of their role and training needs for child protection practice. Six school nurses were purposefully selected and data collection comprised of semi-structured interviews. Ethical approval was not required under NHS research governance arrangements as the project was considered an opinion survey. However, ethical approval was obtained from the university research and ethics committee and permission obtained from the local NHS board. Informed written consent was obtained from participants and they were advised that participation was voluntary. Confidentiality was assured by adhering to the Data Protection Act (1998), and participants were assigned numerical codes to anonymise data.

Stage 1: Familiarisation

Following each semi-structured interview (n=6) field notes were made and the audio recording was transcribed. The transcripts were then read together with the field notes to start familiarisation with the content of each interview to gain a broad overview of participant responses. In addition, notes were made on each transcript by jotting down any topics and ideas that were interesting or significant; also noting thoughts in a reflective diary which allowed reflection on each stage of the research process and the role of the researcher in the study (Smith, 2006; Jootun, McGhee and Marland, 2009). This stage enabled immersion in the data which is crucial to ensure that the labels developed in Stage 2 were supported by the data (Spencer et al, 2014).

Stage 2: Constructing a thematic framework

The next step was to begin constructing the thematic framework to help organise the data. The list of topics and ideas that emerged during Stage 1 were reviewed, taking cognisance of the aims of the study and the topics in the interview topic guide (Table 1), as these reflected the research questions. Subsequently, the topics and ideas were noted on post it notes and arranged on flip chart paper in order of relevance to the topic guide and similarity of ideas emerging during the interviews. These became the initial thematic framework which were referred to as the Coding Index. The index comprised of a list of themes and subthemes which were then used to label the data in Stage 3 (refer to Table 2). The exemplar provided by Ritchie, Spencer and O'Connor (2010) was a useful reference point for completing Stage 2 correctly.

INSERT TABLE 1

INSERT TABLE 2

Stage 3: Indexing and Sorting

Once the index had been compiled they were added to the transcripts. The transcripts were read again and labels were applied to each transcript. This was a particularly time-consuming step due to the length of the transcript and the need to read each paragraph line by line to interpret the meaning and decide which label to apply (Ritchie, Spencer and O'Connor (2010). In addition, Ritchie, Spencer and O'Connor (2010) advise that this process needs to be completed systematically. In view of this, copies of each transcript were saved with 'Track changes', and 'New Comment' functions on Microsoft Word to record the label on the right hand margin of the transcript. Although, this process remained time consuming, visually it was easier to read the labels and this was advantageous especially during later stages when constantly moving backwards and forwards across data. Following completion of indexing, the indexed transcripts were printed in preparation for reading them again and developing the thematic charts.

Stage 4: Data Summary and Display

When constructing the thematic charts for the initial themes, Ritchie, Spencer and O'Connor (2010) suggest it is essential to record information for each participant and to include a column to record any comments. Numbers were used to anonymise each of the school nurse (SN) participants. At this stage, one verbatim quote from each participant was used and initial interpretation noted in the comments box along with other relevant information such as changes in the tone of voice of participants, any noises that they made (see Table 3 for an extract of a thematic chart). For example, during one interview the participant banged on a table when making a point. During this stage it was essential to re-read the transcripts and listen again to the audio recordings to ensure further immersion in the data.

INSERT TABLE 3

Stage 5: Mapping and Interpretation

Following completion of the thematic charts (n=8) for each of the initial themes, the next stage was to develop the main themes and sub-themes. This required constructing more charts and mapping and interpretation of the data (see Table 4).

INSERT TABLE 4

The vast amount of information can feel overwhelming, however this process does allow the researcher to become more immersed in the data as suggested in the literature (Ritchie, Spencer and O'Connor, 2010; Smith, Bekker and Cheater, 2011). The process involves going backwards and forwards across the transcripts to obtain and clarify information and to select relevant and appropriate quotes. It was also necessary to go backwards and forwards across the thematic charts developed for the initial themes to begin interpreting and making sense of data. During this process three key themes and six sub themes were emerging (see table 5). To assure the trustworthiness of the study, it was important that the names assigned to the themes and subthemes reflected the voices of the participants, and that the themes “gave voice” to the participants’ perception of their experience.

INSERT TABLE 5

The thematic charts allowed the themes to be visibly represented and the charts provided a transparent audit trail of the process helping to explain how the data had been interpreted. Moreover, the use of a reflexive approach added to the rigour and trustworthiness of the findings (Bulpitt and Martin, 2010; Freshwater et al, 2010).

What are the strengths of using this approach?

Framework provides the researcher with a systematic structure that is visual and transparent enabling the development and maintenance of a clear audit trail from the beginning of data analysis (Tobin and Begley, 2004; Vivar, 2007; Smith and Firth, 2011). This allows others to follow the methods, processes and decisions taken to produce the findings and to make conclusions, and this is an important consideration when planning how to evidence the robustness and rigour of the research study (Tobin and Begley, 2004; Gale et al, 2013; Ward et al, 2013). In addition, it provides a step by step guide to the management and thematic analysis of data which was particularly helpful as the systematic nature of this method did facilitate effective organisation and reduction of data as suggested by NatCen Learning (2012) and Gale et al (2013). This can also be advantageous if the research is being undertaken within a multi-disciplinary team (Gale et al, 2013; Ward et al, 2013; Parkinson et al, 2016) due to the visual display of data making it transparent for others to follow.

Another key strength of Framework is that the process of coding and charting enables the researcher to look down at emerging themes (thematic analysis) and also to look across cases (case analysis) which can help in the identification of patterns (NatCen Learning, 2012; Gale et al, 2013). Furthermore, as the process is continuous and iterative, it provides flexibility to move backwards and forwards across the data which facilitates greater familiarity and immersion in the data (Smith, Bekker & Cheater, 2011); and ultimately a better understanding of the perceptions and experience of the participants involved in the research study (Gale et al, 2013).

Finally, Framework can be used without the need for using computer-assisted qualitative data analysis software (CAQDAS) such as N-Vivo (Swallow, Newton and Van Lottum, 2003; Brunt, 2011). This can be of benefit to research students who have

time limitations to complete their dissertation and may not have the time to spend learning how to use a computer software package. In addition limited finances may also restrict access as many student dissertations are not funded research. However, Framework is also suitable for use with qualitative data handling packages (Gale et al, 2013; Ward et al, 2013; Parkinson et al, 2016), and N-Vivo has developed framework matrices to support Framework Analysis. This is a useful feature especially when the data set is large and multiple researchers are to be involved (Spencer et al, 2014).

What are the challenges?

Despite the strengths of Framework, there are some challenges to using this approach which should be accounted for when writing the research proposal. It is time-consuming and resource intensive, however this is true of all qualitative data analysis. Therefore time and resources need to be written into the research proposal ideally before applications for funding are made (Gale et al, 2013).

Making sense of the terminology is challenging and it can be confusing for the novice, however this again could be said to be true of many qualitative data analysis approaches. Spencer et al (2014) acknowledge that within the literature on qualitative analysis there is a lack of agreement surrounding the use of terms, in particular 'codes', 'themes' and 'categories'. They contend that rather than getting caught up trying to work out the difference between a code and an index and a theme or a category, it is actually more important to develop an understanding of the basic steps of the analytic process which will provide the rigour required (Spencer et al, 2014).

In addition, creating the theoretical framework, constructing the thematic charts and summarising the data can be complicated especially if there is any ambiguity within the content of data. For example, in this study one participant stated that they were clear about their role in child protection, but then stated that they were unsure about

their role. Consequently, the first author found herself trying to interpret the meaning of subjective data at this stage which was too early in the analytical process as more ideas emerged during mapping and interpretation. Parkinson et al (2016) concur and stress the importance of being mindful of the aims of the research and the research questions throughout the analytical process. Furthermore, Gale et al (2013) highlight that for the successful application of Framework, researchers should be experienced in or have previous training in qualitative analysis. Moreover, information technology skills, particularly in the construction of spreadsheets are crucial to aid the development of the index and charting of the data if not using computer assisted software packages.

Reflections

Despite some of the challenges experienced applying Framework, the strengths outweigh the challenges and it is a useful approach to provide a structure for novice and experienced researchers. A key strength is that it is systematic and flexible, providing a framework to guide the novice researcher through the analytical process. The analytical hierarchy provided clear guidance on the stages that needed to be followed and the development of an index which was applied to the transcripts provided consistency and facilitated the development of the initial thematic charts. Once the charts were developed, although there were different charts for each of the initial themes, it was easier to identify similarities and differences of opinion between the views of participants. Training in qualitative analysis would have been useful and the first author intends to obtain training in Framework matrices for her doctoral study.

Conclusion

This article has considered the use of the Framework Approach in qualitative research and has provided an account of one novice researcher's experience of using

Framework for qualitative data analysis. It has been argued that Framework is an approach that provides the researcher with a systematic and flexible structure to manage and analyse their data enabling the development and maintenance of a transparent audit trail. It can be used with or without computer assisted software and it is suitable for the thematic analysis of different qualitative approaches. Moreover, it allows the researcher to become immersed in the data thus increasing their understanding of participant experiences. However, it can be complicated to use, resource intensive and time consuming, although one could argue that qualitative analysis is time consuming and resource intensive regardless of the method used. For these reasons, novice researchers should consider applying for training in qualitative analysis prior to commencing data collection. Moreover, seeking supervisors who are experienced in the Framework approach would ensure the novice researcher receives appropriate support and guidance.

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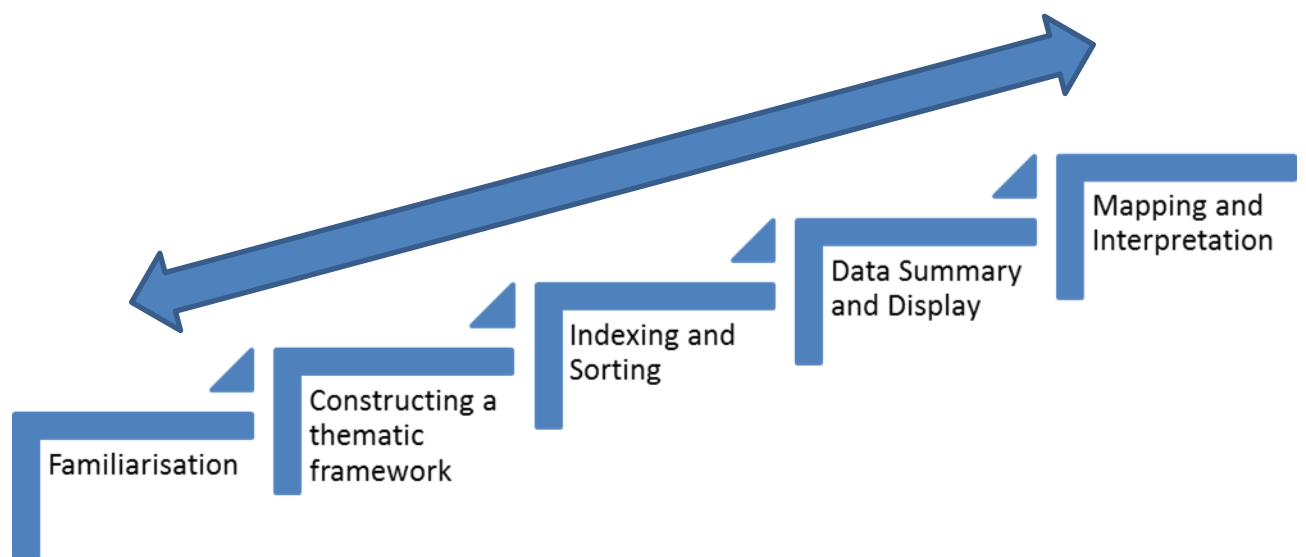


Figure One: Thematic framework ladder

Table 1: Extract of Interview Topic Guide
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1. Current knowledge, experience, qualifications and training
2. Perceived role and responsibilities in relation to safeguarding and protecting children and young people
3. Current involvement in child protection issues
4. Perceived educational/training needs for identifying and responding to child protection issues
5. Awareness of child protection courses/training
6. Perceived/actual barriers to uptake of training/educational courses

Table 2: Extract from Coding Index

2 Experience

- 2.1 Length of time since first qualification
- 2.2 Length of time in position as a school nurse
- 2.3 Importance of experience
- 2.4 Other

Table 3: Extract of Thematic Chart for Experience

Experience	2.1	2.2	2.3	2.4	Comments
Participant Number	Length of time since first qualification	Length of time in position as a school nurse	Importance of experience	Other issues	
SN2	Qualified in 1995-17 years	Started in 2005-6 years	"I think life experience brings you to that too. If I had come into school nursing straight as a		This SN really values life experience and views it as very important for her role as a school nurse.

			newly qualified nurse without a whole load of life experience, I probably wouldn't have the same ability to pick up on little things.		SN feels that experience is essential to help in the identification of child protection issues.
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Table 4: Extract of the development of theme 2: Learning in Practice

Data charted in column 2.3	Elements/dimensions identified- in order identified in chart	Theme/subtheme
Importance of experience		
SN2. You might have looked on it differently without the experience or not be able to pick that up the same. So that's where I think life experience comes in (p2)	Life experience seems to be important for the identification of child protection issues	Learning in practice/Importance of experience
SN6. The more times you have to deal with situations, the more that you learn and you develop skills and strategies to help you cope based on what went well and what didn't go well (p7)	Feels that learning through experience gained on the job is important	Learning in practice/Learning from experience

Table 5: Key themes and subthemes

Role Confusion	Lack of clarity Variation in practice Competing demands
Learning in Practice	Importance of experience

	<p>Learning from experience</p> <p>Learning from others</p>
Moving Forward	<p>Self-development</p> <p>Supporting child and young person</p> <p>Practice development</p>

The reviewers have now provided their feedback on your submission. They have recommended a revision of the article before being reviewed again. We hope you will be able to incorporate their comments and look forward to seeing your revised article. Your revision is due by 27/10/2017. Please attach a table listing the changes you have made to your article. If there are any suggested changes with which you disagree, please also list these in the table.

If you have a problem with this deadline, please let us know.

DON'T FORGET TO UPDATE THE WORD COUNT questions in the Additional Information section.

Comments from the Editors and Reviewers:

Reviewer comments	Author response
<p>Reviewer #1: This is an interesting paper and would add to our knowledge of data analysis framework and would provide guidance to all researchers especially novice ones. It does need some modifications, these should be attended to and this will strengthen and add clarity to the paper.</p> <p>Reviewer #2: Thank you very much for submitting your article which provides a good overview of Framework approach and updates a similar early article</p> <p>Reviewer #3: This paper provides an interesting example of an analysis method.</p>	<p>The authors thank the reviews for their constructive comments.</p>

Reviewer comments	Author response
<p>General comments by reviewers:</p> <p>Need to proof read, some punctuation errors.</p> <p>Grammar and sentence structure could be improved throughout, some examples have been provided.</p> <p>Referencing and spacing errors need to be corrected throughout.</p> <p>There are some areas where the wordiness of the paper could be reduced - suggestions have been provided of the kinds of 'unnecessary' text that could be removed.</p>	<p>Apologies for such errors, although we did proof read the article prior to submission, some errors slipped our scrutiny.</p> <p>Thank you for the suggestions, we have reviewed the paper and accepted the reviewers suggestions as well as making some additional edits to improve the succinctness of the paper.</p>
<p>Typically in qualitative research, rigour and trustworthiness are terms used rather than reliability, if using terms which are not synonymous with qualitative research it would be best to say why you did this.</p>	<p>We agree with the reviewer and have changed our use of terminology to be consistent with qualitative research.</p>
<p>Be clear as to the purpose of the framework is it its primary aim is to provide a framework for analysis as opposed to managing the data (although I think they do recommend a software package such as Nvivo).</p> <p>The role of this analysis method and qualitative analysis software is not clear.</p>	<p>We have changed this to be clearer that the primary aim is to provide a framework for analysis.</p> <p>We have added in some explanation to address this comment.</p>
<p>Unclear who should receive training, I assume it's the supervisors as well as the novice researcher....need to be more explicit.</p>	<p>Made this explicit.</p> <p>p.12: Furthermore, Gale et al (2013) highlight that for the successful application of Framework, researchers should be experienced in or have previous training in qualitative analysis.</p> <p>P13: For these reasons, novice researchers should consider applying for training in qualitative analysis prior to commencing data collection.</p> <p>Moreover, seeking supervisors who are experienced in the Framework approach would ensure the novice researcher receives appropriate support and guidance.</p>

Reviewer comments	Author response
Be mindful of using the terms 'lived experience' as it could point the reader towards phenomenology rather than broad qualitative also the reference to the lived experience is somewhat at odds with the aim of the research being discussed which is 'perceptions'.	We have removed reference to lived experience and phenomenology.
It is stated that this framework was developed for use in policy research so recommend more explanation on why and how it can be applied to more smaller type studies seems to suggest it was the policy development research that needed a highly structured approach to analysis rather than it be applicable to all qualitative research.	Our statement simply alludes to the historical development of the method but we have added the following statement: Such a structured approach has been found to provide useful guidance to novice researchers (Smith & Frith, 2011).
Include reference to the diagram of the framework earlier i.e. after sentence beginning " Framework is matrix-based".	We have added in reference to the framework matrix as suggested.
Need to expand on "elements" in sentence beginning with "The thematic framework contains all the element of the analytical hierarchy".	We are mindful of the comments relating to word count therefore rather than add to description we have changed the wording of this sentence along with the following sentence to make our point clearer.
Recommend describing or explaining each term in the ladder rungs in more detail.	The worked example provides an in depth example of each step of the ladder.
It is suggested that the 'ladder' facilitates to'ing and fro'ing between rungs but the diagram doesn't show this, in fact it seems to be a linear process, so need to say that it isn't a linear process as one might assume from the diagram.	Thank you for this observation, we have added a double ended arrow to suggest flow upwards and downwards on the ladder.
The first sentence here suggests that it hints at a more quantitative paradigm rather than as stated the 'qualitative paradigm' more detailed explanation required here about how it fits with the qualitative paradigm.	We have made an error in spelling here which has significantly altered the understanding. We have changed this to: The Framework Method is not aligned to any particular epistemological, philosophical or theoretical approach, and its highly structured approach to the analysis of qualitative data does hint at considerable influence from the <u>quantitative</u> paradigm (Gale et al, 2013).
The second point "secondly"needs more expansion, rather than just saying it is congruent with an interpretive stance, elaborate and explain why.	Thank you for this observation. We have changed this sentence as follows:

Reviewer comments	Author response
	<p>In addition, the systematic processes along with the ability for the analysis to be completed <u>without computer assisted software</u> provides useful structure and guidance for novice researchers (Swallow, Newton and Van Lottum, 2003; Brunt, 2011).</p>
<p>I think you should reconsider the order of this paper and put the sections on strengths and challenges after the worked example. It would flow better and the reader would have seen the worked example first and could probably relate to the comments on the strengths etc better if this was done.</p>	<p>Thank you for this observation, we agree and have made the change.</p>
<p>Recommend including more references than just Gale et al (2013) in sentence beginning " framework is flexible" etc, while it could be argued that the framework is useful for different qualitative approaches, it could also be argued that this might be a disadvantage as how can a generic approach be suitable for a range of different paradigms (a sentence or so could address this).</p>	<p>Thank you – we have added relevant references to support this statement.</p> <p>We are not of the same opinion (and cannot find published evidence) however that the application of framework to a range of paradigms is a disadvantage so we are unable to argue this point of view as it would be purely opinion based.</p>
<p>More elaboration needed of " another key strength".</p>	<p>Elaboration is developed in the following sentence which commences "furthermore"</p>
<p>I take the point regarding financial constraints but am not convinced about the time limitations argument: regardless of whether one use a data management package such as nvivo or not, all qualitative analysis by its nature is time consuming, furthermore this point is contradicted in the second sentence under "Challenges".</p>	<p>Thank you, we have changed the wording of this section to the following which we hope makes our point clearer. We were trying to get across the time constraint related to learning how to use the tool, (not doing the analysis) clearer:</p> <p>This can be of benefit to research students who have time limitations to complete their dissertation and may not have the time to spend learning how to use a computer software package. In addition limited finances may also restrict access as many student dissertations are not funded research.</p> <p>We have also made a change to the section under challenges to read as follows:</p>

Reviewer comments	Author response
	<p>It is time-consuming and resource intensive, however this is true of all qualitative data analysis....</p>
<p>I am not convinced by the argument of not getting into the meaning of terms such as coding, categories, themes. It is very important for the audit trail (and thus rigour of the research process) that the reader understands what the researcher means by their use of various terms so the researcher needs to explain what these terms mean in the particular research being discussed/described.</p>	<p>We would agree however the point made is in relation to Spencer et al's comments in relation to lack of agreement in the literature. We have added to the end of the sentence to indicate that by following the steps will help provide the necessary rigour (see underlined).</p> <p>Spencer et al (2014) acknowledge that within the literature on qualitative analysis there is a lack of agreement surrounding the use of terms, in particular 'codes', 'themes' and 'categories'. They contend that rather than getting caught up trying to work out the difference between a code and an index and a theme or a category, it is actually more important <u>for the novice</u> to develop an understanding of the basic steps of the analytic process <u>which will provide the rigour required</u> (Spencer et al, 2014).</p>
<p>The section beginning with "following on from this, creating the index" is not clear and needs to be revisited and amended so that the reader can clearly follow the point being made.</p>	<p>This section has been amended:</p> <p>In addition, creating the theoretical framework, constructing the thematic charts and summarising the data can be complicated especially if there is any ambiguity within the content of data. For example, in this study one participant stated that they were clear about their role in child protection, but then stated that they were unsure about their role. Consequently, the first author found herself trying to interpret the meaning of subjective data at this stage which was too early in the analytical process as more ideas emerged during mapping and interpretation.</p>

Reviewer comments	Author response
<p>Applying the framework method: A worked example While I take the point regarding the NHS ethics committee and its decision that this study was an evaluation and not research per se, it strikes me as unusual as it seems to me that this was a research study. I think it is incumbent upon the researcher to be very explicit on how ethical principles were applied and how the rights of the participants were safeguarded. That said I acknowledge that the purpose of this paper is on the use of the framework and is not focused on reporting the findings.</p>	<p>Thank you. The study was deemed to be an opinion survey We have addressed the comments you made: Ethical approval was not required under NHS research governance arrangements as the project was considered an opinion survey. However, ethical approval was obtained from the university research and ethics committee and permission obtained from the local NHS board. Informed written consent was obtained from participants and they were advised that participation was voluntary. Confidentiality was assured by adhering to the Data Protection Act (1998), and participants were assigned numerical codes to anonymise data.</p>
<p>How did the researcher determine what was relevant, what informed this decision?</p>	<p>P8/9 This sentence has been amended to: Subsequently, the topics and ideas were noted on post it notes and arranged on flip chart paper in order of relevance to the topic guide and similarity of ideas emerging during the interviews.</p>
<p>There is some lack of clarity between stages 2 and 3; stage 3 explicitly refers to the coding index but this is discussed in stage 2 where does it belong and is there some overlap between these two stages recommend some elaboration on this.</p>	<p>More clarity and elaboration provided. Stage 2 amended to: These became the initial thematic framework which were referred to as the Coding Index. The index comprised of a list of themes and subthemes which were then used to label the data in Stage 3 (refer to Table 2). The exemplar provided by Ritchie, Spencer and O'Connor (2010) was a useful reference point for completing Stage 2 correctly</p>
<p>Also regarding stage 2, while it is important to find answers to the research questions, need to be careful that the themes identified are not just reflections of the questions asked the themes need to be more 'organic', did the framework force this direction? , need to be very open to what's being said by the participants.</p>	<p>This has been addressed: Subsequently, the topics and ideas were noted on post it notes and arranged on flip chart paper in order of relevance to the topic guide and similarity of ideas emerging during the interviews.</p>
<p>The reflection section is quite short; recommend it be more detailed.</p>	<p>Due to limited word count it has been difficult to provide more detail. One additional detail added:</p>

Reviewer comments	Author response
	Training in qualitative analysis would have been useful and the first author intends to obtain training in Framework matrices for her doctoral study.
Consider being consistent with terminology, Framework approach would be better throughput as is more consistent with original authors, and would help with grammar and sentence structure, although Framework, Framework approach and Framework Method are used interchangeable in the literature.	Thank you. Terminology has been amended to Framework approach rather than method. However, due to sentence structure and word count, on occasions Framework has been used.
Title could be shorter: A worked example the application of the Framework approach to analyse qualitative data: strengths and challenges.	Thank you. Title has been amended to: A worked example, the application of the Framework approach to analyse qualitative data: strengths and challenges
It is inferred that this is acceptable to all qual research, however, this may not be true given the various epistemological / philosophical approaches. The difference between epistemological / philosophical approaches and data collection methods needs to be clarified. Specific comments are annotated on the attached PDF	The specific comments annotated on the PDF have been addressed to provide more clarity.
Page 2, Note (Orange): The word count needs to be reduced to facilitate publication	Word Count is 3054 including abstract.
Page 5, Note (Orange): More detail here about the methods would allow the reader to better follow the subsequent critique.	Due to word count and amended structure, more detail about the methods has not been added.
Page 6, Note (Orange): Does this require acknowledgement of an original source?	No. Second author constructed the ladder.
Page 6, Note (Orange): Does the fact that it is so structured meant that it is unsuitable for some qual philosophical approaches?	This has been addressed in the following sentence: Framework provides a highly structured approach to the analysis of qualitative data, and although this does hint at considerable influence from the quantitative paradigm (Gale et al, 2013), the processes are flexible and iterative facilitating interpretation of data.

Reviewer comments	Author response
Page 6, Note (Orange): Should this be quantitative?	Yes, sorry. This has been amended.
Page 6, Note (Orange): What do you mean by manually?	Changed manually to without computer assisted software
Page 6, Note (Orange): Epistemology is not necessarily linked to data collection method - clarification is required here.	This section has been revised to take cognisance of your comments. The sentence starting with: Lack of alignment to one particular epistemological stance has been deleted.
Page 7, Note (Orange): More effective than what?	P10, This sentence has been amended to: In addition, it provides a step by step guide to the management and thematic analysis of data which was particularly helpful as the systematic nature of this method did facilitate effective organisation and reduction of data as suggested by NatCen Learning (2012) and Gale et al (2013).
Page 7, Strike-Out (Black): Content: "Framework is flexible and as highlighted previously it can be used for thematic analysis of different qualitative approaches as it is not aligned to an epistemological, theoretical or philosophical stance (Gale et al, 2013)."Comment: This has already been said several times and does not need to be repeated.	Thank you. This whole sentence has been deleted.
Page 8, Note (Orange): Not sure that this is a specific challenge with this method?	It was a challenge the first author encountered.
Page 9, Note (Orange): Please review whole document and remove additional spaces.	Document has been reviewed and additional spaces removed.
Page 9, Note (Orange): The paper would be strengthened by removing "I" and writing in a more formal manner.	Thank you. We have made the change.

Reviewer comments	Author response
<p>The first sentence of paragraph 2 in the introduction is clear, the remainder of this paragraph is rambling and does not flow- perhaps reword; The third paragraph of the introduction starts with a however, reword / or link to the previous paragraph; Make sure all sentences are complete for example 3rd paragraph in the introduction would be better as: There a range of methods that can be undertaken to manage and analyse qualitative data.</p>	<p>Thank you.</p> <p>The first sentence of paragraph 3 in the introduction has been amended to: There a range of methods that can be undertaken to manage and analyse qualitative data</p>
<p>First line try not to use Framework approach and thematic analysis as though they are interchangeable, you could state: Framework approach is a qualitative data analysis method, that offer the research a systematic structure to manage, analyse and identify themes and is particularly useful with large volumes of text based data.</p>	<p>Thank you. We have made the change in the abstract and the paper</p>
<p>What are the strengths and limitations of the Framework approach? And add something about limitations Finally Framework approach can be used manually what do you mean? Reword for example start with- Although qualitative data software packages such as N-Vivo have become widely accepted because they have sophisticated code and retrieve functions which speeds up the process of managing large data sets, they are not a pre-requisite for undertaking qualitative analysis.</p>	<p>We are unsure whether you are suggesting that Challenges should be changed to Limitations? Given the word count it is not possible to add in more detail about limitations and we feel that these have been addressed in the paper.</p> <p>Manually has been amended to:</p> <p><u>without computer assisted software</u></p>
<p>Consider identifying more appropriate references such as not using undergraduate text (Parahoo)</p> <p>You need review your reference list, for example why reference earlier text books that have been updated, you don't need web links for articles, the Richie and Spencer (1994) reference is a secondary citation, obtain the original.</p>	<p>The article is aimed at novice researchers and Parahoo is an accessible text that will help develop the novice's understanding. We would prefer to keep this reference as is as we have provided many other references that are more advanced within the article.</p> <p>References have been updated. We have removed the secondary reference.</p>

Reviewer comments	Author response
<p>Page 9, Note (Orange): The text could be written much more succinctly here - see examples of wordiness that could be removed.</p> <p>Page 9, Strike-Out (Black): Content: "digital onto a word documen"</p> <p>Page 9, Strike-Out (Black): Content: " to the questions"</p> <p>Page 10, Strike-Out (Black): Content: "to reflect on "</p> <p>Page 10, Strike-Out (Black): Content: "me"</p> <p>Page 10, Note (Orange): Please remove Colour from tables</p> <p>Page 11, Note (Orange): Applied</p> <p>Page 11, Strike-Out (Black): Content: "I started to manually apply"</p> <p>Page 11, Highlight (Yellow): Content: "O=92Connor (2010)."</p> <p>Page 11, Strike-Out (Black): Content: "(MS)"</p> <p>Page 13, Strike-Out (Black): Content: "I felt"</p> <p>Page 15, Highlight (Yellow):</p>	<p>Thank you for these helpful editing suggestions. We have made all suggested changes.</p>

Reviewer comments	Author response
<p>Content: "CAQDAS"</p> <p>Page 18, Note (Orange): There are several more recent editions of this text - please cite the most recent version</p> <p>Page 20, Note (Orange): Please correct all referencing issues</p> <p>Page 22, Note (Orange): Tables should only be provided at the end to the text and removed from within the text - please just indicate where they should be inserted.</p>	

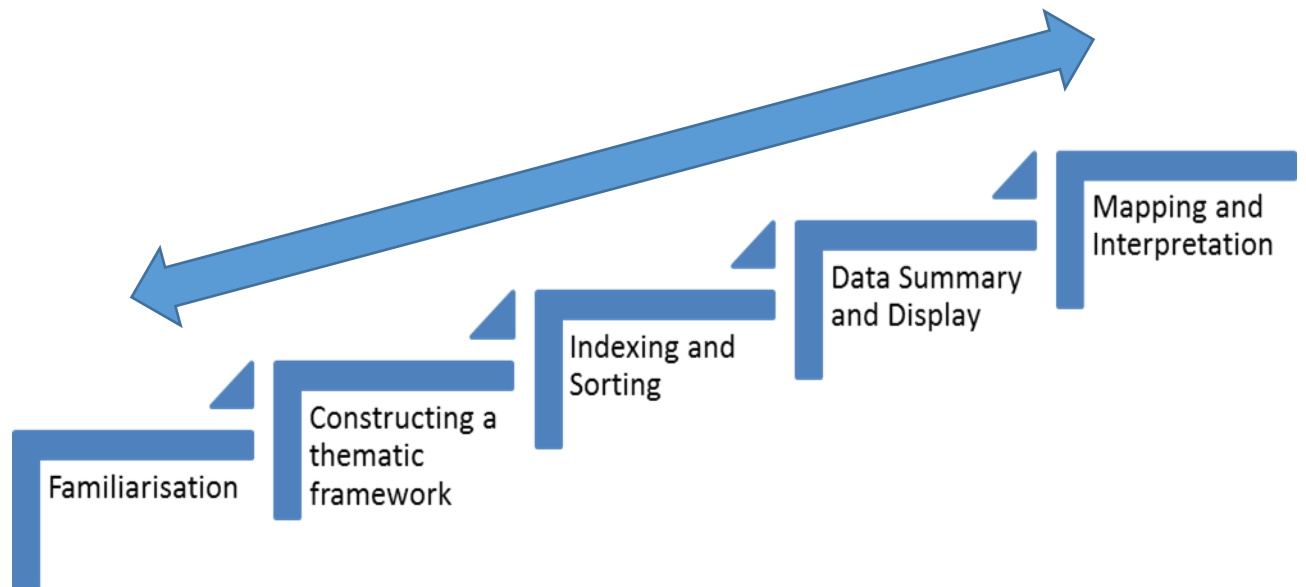


Figure One: Thematic framework ladder

Table 1: Extract of Interview Topic Guide
<div>1. Current knowledge, experience, qualifications and training</div> <div>2. Perceived role and responsibilities in relation to safeguarding and protecting children and young people</div> <div>3. Current involvement in child protection issues</div> <div>4. Perceived educational/training needs for identifying and responding to child protection issues</div> <div>5. Awareness of child protection courses/training</div> <div>6. Perceived/actual barriers to uptake of training/educational courses</div>

Table 2: Extract from Coding Index	
2	Experience
2.1	Length of time since first qualification
2.2	Length of time in position as a school nurse
2.3	Importance of experience
2.4	Other

Table 3: Extract of Thematic Chart for Experience

Experience	2.1	2.2	2.3	2.4	Comments
Participant Number	Length of time since first qualification	Length of time in position as a school nurse	Importance of experience	Other issues	
SN2	Qualified in 1995-17 years	Started in 2005-6 years	"I think life experience brings you to that too. If I had come into school nursing straight as a newly qualified nurse without a whole load of life experience, I probably wouldn't have the same ability to pick up on little things.		This SN really values life experience and views it as very important for her role as a school nurse. SN feels that experience is essential to help in the identification of child protection issues.

Table 4: Extract of the development of theme 2: Learning in Practice

Data charted in column 2.3	Elements/dimensions identified- in order identified in chart	Theme/subtheme
Importance of experience		
SN2. You might have looked on it differently without the experience or not be able to pick that up the same. So that's where I think life experience comes in (p2)	Life experience seems to be important for the identification of child protection issues	Learning in practice/Importance of experience
SN6. The more times you have to deal with situations, the more that you learn and you develop skills and strategies to help you cope based on what went well and what didn't go well (p7)	Feels that learning through experience gained on the job is important	Learning in practice/Learning from experience

Table 5: Key themes and subthemes

Role Confusion	<p>Lack of clarity</p> <p>Variation in practice</p> <p>Competing demands</p>
Learning in Practice	<p>Importance of experience</p> <p>Learning from experience</p> <p>Learning from others</p>
Moving Forward	<p>Self-development</p> <p>Supporting child and young person</p> <p>Practice development</p>